

ACTION SHEET 28

between

**The Power Reactor and Nuclear Fuel Development Corporation of Japan (PNC)
and
The United States Department of Energy (DOE)
for**

Joint Study of the Conceptual Design for the RETF Safeguards System

1. Introduction

Under Article II (Area of Cooperation) of the Agreement between PNC and DOE for Cooperation in Research and Development Concerning Nuclear Material Control and Accounting Measures for Safeguards and Nonproliferation (herein called the "Agreement"), dated September 15, 1993, DOE and PNC undertake to carry out a cooperative effort on the Joint Study of the Conceptual Design for the Recycle Equipment Test Facility (RETF) Safeguards System. This Action Sheet will take into consideration certain aspects of Programme 93+2 for a strengthened and cost-effective safeguards system, to include the design of remote monitoring capabilities.

2. Scope of Work

This Action Sheet (AS) provides for a cooperative effort on the joint study of the conceptual design for the RETF safeguards system which will include unattended remote NDA systems, containment/surveillance (C/S) systems, sample integrity, authentication measures for operator measurement systems, NRTA simulation, and data transmission on the operator measurement systems for the process monitoring.

The work performed under this Action Sheet shall be performed at the Los Alamos National Laboratory (LANL), Sandia National Laboratories (SNL), and PNC in accordance with the terms and conditions of the Agreement.

3. Program Management

LANL is responsible for studying the remote NDA systems and NRTA systems. SNL is responsible for studying the C/S systems, authentication measures for operator measurement system, sample integrity and data transmission on operator measurement system for process monitoring system. It is expected that remote monitoring is a desired capability of the safeguards design. PNC is responsible for providing design information, information on plant operation, and other information required for completion of the joint studies. The work to be done is identified in Appendix I and is limited to techniques for safeguards applications. Appendix II identifies key personnel working on this project.

DOE, SNL and LANL shall work directly with PNC in planning tasks and resolving programmatic and technical questions. LANL and SNL shall start by developing and circulating separate work plans with projected milestones for each task and update the work plans with PNC concurrence as work progresses.

LANL and SNL shall prepare intermediate reports on the task and circulate them to PNC, DOE, and to other pertinent organizations as requested by PNC.

LANL, SNL and PNC shall prepare and present written and oral reports at meetings of the Permanent Coordinating Group (PCG).

4. Fiscal Management

PNC shall make a cash contribution with the sum of \$280,000 in United States dollars to conduct the activities related to the completion of joint studies into safeguards techniques at the RETF as defined in Appendix I of this Action Sheet in the following manner:

- a.) A contribution of \$80,000 in United States dollars shall be due and payable upon receipt of invoices to be issued upon or shortly after the date of signature of this Action Sheet. LANL and SNL shall each submit an invoice for \$40,000.
- b.) A contribution of \$200,000 in United States dollars shall be due and payable upon receipt of an invoices to be issued in April 1997. LANL and SNL shall each submit an invoice for \$100,000. This payment is subject to approval and the appropriation of necessary funding by the Japanese Government for Japanese Fiscal Year 1997 (JFY 1997).

All contributions by PNC shall be due and payable within thirty days of receipt by PNC of an invoice from DOE, subject to availability of appropriated funds to PNC.

DOE shall be responsible for the budget planning and financial management and shall make best efforts to complete the PNC-funded activities in the Appendix I satisfactorily and within the cash contribution by PNC. DOE costs are determined in accordance with DOE's policy for costing work it performs for others as set forth in 10 CFR Part 1009. The total cost to PNC for DOE's performance of work under this Action Sheet shall not, without PNC's prior consent, exceed the contributions set forth above.

DOE shall not begin or carry out work prior to entry into force of the Agreement and Action Sheet and receipt of the required payment in advance. Work shall not be continued after funds from PNC have been depleted.

Throughout the duration of work under this Action Sheet, PNC shall provide sufficient funds in advance to reimburse DOE for causing SNL or LANL to perform the work described in this Action Sheet, and DOE shall have no obligation to perform in the absence of adequate advance funds. Payment in advance from PNC shall be sufficient to cover the expected obligation and cash requirements of the work until a subsequent request for payment in advance can be made, collected, and recorded. In this regard, sufficient advance funds shall be provided to maintain, at a minimum, a continuous 90-days advance of funds for expected DOE fund requirements during the life of this Action Sheet. Advances shall be sufficient to cover expected termination costs that DOE would incur on behalf of PNC.

5. Duration and Termination

This Action Sheet shall enter into force upon the later date of signature and shall continue in force for an 18 month period or until mutually agreed by the parties that all activities under this Action Sheet are completed.

For the Power Reactor and Nuclear Fuel
Development Corporation of Japan

Signature: Masami Katsuragawa

Printed
Name: Masami Katsuragawa

Title: Director, International Div.

Date: January 28, 1997

For the United States
Department of Energy

Signature: Kenneth E. Sanders

Printed
Name: Kenneth E. Sanders

Title: Director,
International Safeguards Division

Date: February 24, 1997

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APPENDIX I

Joint Study of the Conceptual Design for the RETF Safeguards System

1. Study Outline

In developing the conceptual design for the RETF safeguards system, the study will consider the verification points and methods, the remote NDA systems (including pattern recognition study), C/S systems, sample integrity, authentication measures for operator measurement systems (including auto sampling system), NRTA system, and data transmission on operator measurement systems for the process monitoring. All study areas will consider international safeguards requirements, plant operation requirements, and the process and plant design.

LANL will perform a study of the remote NDA system and NRTA system. SNL will perform studies of the C/S system, sample integrity, authentication measures for operator measurement system, and the data transmission on operator measurement systems for process monitoring.

2. Sites

This work will be conducted at:

Los Alamos National Laboratory
Los Alamos, New Mexico, USA

Sandia National Laboratories
Albuquerque, New Mexico, USA

Power Reactor and Nuclear Fuel Development Corporation
Tokai Works
Tokai-mura, Japan

3. Programmatic Responsibilities

A. LANL and SNL will be responsible for providing best efforts within the funding and schedule for the conceptual design. Any tests or technical assistance shall be provided on a non-interference basis with existing LANL and SNL programs.

B. PNC will be responsible for providing information on RETF plant design and operation.

C. LANL, SNL and PNC will jointly participate in technical meetings and report preparation.

As more detailed program plans are developed, specific responsibilities will be better defined and delineated.

4. Schedule*

ID	Task Name	1997				1998		
		Q1	Q2	Q3	Q4	Q1	Q2	Q3
1	Activities							
2	Review of the plant design and operation functions							
3	Study of verification points and method							
4	Study of C/S points and method							
5	Study of remote NDA system							
6	Study of data transmission for process monitoring							
7	Study of authentication for auto sampling system							
8	Study for NRTA system							
9	Study of sample integrity							
10	Reporting							
11	Interim	◆						
12	Final							
13	Technical Meeting, one per quarter							

* The schedule will be followed on a best-effort basis commencing on receipt of funding and availability of parts.

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APPENDIX II
Key Personnel

Joint Study of the Conceptual Design for the RETF Safeguards System

Power Reactor and Nuclear Fuel Development Corporation

1. PNC Headquarters

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Takeshi Kawamura, General Manager
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International Division
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2. Tokai Works

Keiichori Hori, General Manager
Safeguards Office
Nuclear Material Control Division, Tokai Works
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Tokai-mura, Ibaraki-ken
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Department of Energy

1. DOE Headquarters

Kenneth Sanders, Director
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John Capps
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2. DOE-Albuquerque Operations Office

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3. Los Alamos National Laboratory

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3. Sandia National Laboratories

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